

Carnival Glasses

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By now we know that circuits that generate light effects or sound effects can always count on a large group of interested readers. Consequently we present here yet another simple running-light display, this time designed such that it can be fitted into a pair of 'carnival glasses'. This means that the party lovers among our electronics hobbyists have something to satisfy their interests. The details of the actual implementation are naturally a question of personal taste, but for the prototype we thought it a nice idea to distribute the total of 16 LEDs over the frame such that the running lights move in mirror image over the two halves of the glasses (D1 on the left, D2 on the right, D5 on the left, D6 on the right and so on). Of course, everyone is free to decide exactly how to build the running light display. Due to its small size, this circuit is also quite suitable for fitting into an illuminated brooch or button.



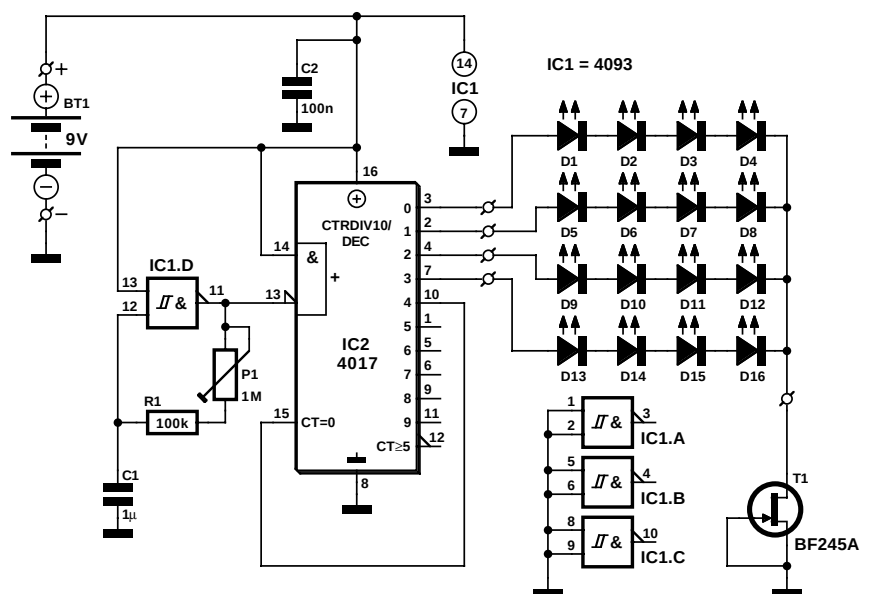
them with two small drops of glue each. The wiring can also be attached in a creative manner. Only five wires are required between the glasses and an external enclosure containing the circuitry and battery. A small control potentiometer can be used for P1, so that the speed of the LEDs can be easily adjusted after everything has been fitted into the enclosure.

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The oscillator built around IC1d is about the simplest imaginable Schmitt-trigger type using a 4093 gate. The frequency can be varied by a factor of approximately ten using potentiometer P1 (roughly speaking, the frequency is a few Hertz). You can also experiment with other values if necessary. The oscillator drives a five-stage Johnson counter, which always has only one active output. Here we have assumed a total of 16 LEDs in groups of four, so there is always one group on and three groups off. The fifth output immediately resets the counter, causing the first output to again become active.

The circuit is powered by a 9-V battery. Depending on the manufacturer, the voltage drop across each LED is more than 1.7 V. If we still want to see something with a nearly empty battery, we thus cannot connect more than four high-efficiency LEDs in series. Since only one row of LEDs is on at once, a FET wired as a simple constant-current source (T1) ensures that the brightness remains good for as long as possible. T1 also prevents excessive current (more than around 4 mA) from flowing when the supply voltage is relatively high.

Fit the LEDs into holes drilled to fit and secure



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